

# Applying New Biotechnology to the Study of Occupational Cancer



## *Agenda*

### *Cancer Research Methods Workshop*

May 8-9, 2002  
Omni Shoreham Hotel  
Washington, DC

National Institute for Occupational Safety and Health  
National Cancer Institute  
National Institute of Environmental Health Sciences  
American Chemistry Council



## Workshop Objective

---

The purpose of the Workshop is to bring together researchers who study worker populations and those who are developing/validating new biotechnologies in order to foster collaborations and promote effective application of methodologies for better understanding of occupational cancer.

## Planning Committee

**Aaron Blair**

National Cancer Institute, Bethesda, MD

**Stefano Bonassi**

National Institute for Research on Cancer, Genoa, Italy

**Paul Brandt-Rauf**

Columbia University, New York, NY

**Ronald Melnick**

National Institute of Environmental Health Sciences, Research Triangle Park, NC

**Frank Mirer**

International Union, United Auto Workers, Detroit, MI

**Nat Rothman**

National Cancer Institute, Bethesda, MD

**Paul Schulte, Co-Chair**

National Institute for Occupational Safety and Health, Cincinnati, OH

**Raymond Tennant**

National Institute of Environmental Health Sciences, Research Triangle Park, NC

**Mark Toraason, Co-Chair**

National Institute for Occupational Safety and Health, Cincinnati, OH

**Elizabeth Ward, Co-Chair**

National Institute for Occupational Safety and Health, Cincinnati, OH

**Ainsley Weston**

National Institute for Occupational Safety and Health, Cincinnati, OH



## Wednesday, May 8

8:00 am *Registration - Ambassador Ballroom - Coffee*

### Welcome and Workshop Objective

8:40 am *Kathleen Rest*  
National Institute for Occupational Safety and Health, Washington, DC

8:45 am *Elizabeth Ward*  
National Institute for Occupational Safety and Health, Cincinnati, OH

9:00 am Occupational Cancer in the 21st Century: What Are the Greatest Challenges?  
*Aaron Blair*  
National Cancer Institute, Bethesda, MD

9:20 am *Discussion*

9:30 am The Promise of New Biotechnologies for Assessing Occupational Carcinogens  
*Martyn Smith*  
University of California, Berkeley, CA

9:50 am *Discussion*

10:00 am *Break - Coffee*

### Challenge of Applying New Biotechnologies to the Study of Occupational Cancer

10:30 am *Introduction*  
*Jack Siemiatycki - Chair*  
University of Montreal, Montreal, Canada

10:40 am Industry Perspective  
*Carol Henry*  
American Chemistry Council, Arlington, VA

10:55 am Academic Perspective  
*Richard Albertini*  
University of Vermont, Burlington, VT



## Wednesday, May 8 (Continued)

11:10 am	<u>Labor Perspective</u> <i>Frank Mirer</i> International Union, United Auto Workers, Detroit, MI
11:25 am	<u>Government Perspective</u> <i>Steve Bayard</i> Occupational Safety and Health Administration, Washington, DC
11:40 am	<i>Discussion</i>
12:00 noon	<i>Lunch (on own)</i>
<u>Markers of Early Biological Effect</u>	
1:00 pm	<u>Introduction</u> <i>Nat Rothman - Chair</i> National Cancer Institute, Bethesda, MD
1:15 pm	<u>Pathobiology of Cancer and the Rationale of Assessing Intermediate Biomarkers</u> <i>Peter Shields</i> Georgetown University, Washington, DC
1:35 pm	<u>Expression Assays and Overall Concepts in Toxicogenomics</u> <i>Michael Waters</i> National Institute of Environmental Health Sciences, Research Triangle Park, NC
1:55 pm	<u>Monitoring Changes in Gene Expression to Assess Exposure to Occupational Carcinogens</u> <i>Ainsley Weston</i> National Institute for Occupational Safety and Health, Morgantown, WV
2:15 pm	<i>Discussion</i>
2:40 pm	<i>Break - Coffee</i>
3:20 pm	<u>DNA Damage and Somatic Mutations Following Exposure to Occupational Carcinogens</u> <i>William Bigbee</i> University of Pittsburgh, Pittsburgh, PA



## Wednesday, May 8 (Continued)

- 3:40 pm Assessing Chromosomal Aberrations in Exposed Human Populations  
*David Eastmond*  
University of California, Riverside, CA
- 4:00 pm Using Biomarkers in Assessment of Exposure to Occupational Carcinogens  
*Stephen Rappaport*  
University of North Carolina, Chapel Hill, NC
- 4:30 pm *Discussion*
- 5:00 pm *Poster Presentations - Wine and Cheese Reception*

## Thursday, May 9

- 7:30 am *Registration - Coffee*
- 8:15 am Application of Proteomics to Assessment of Carcinogen Exposure  
*Sam Hanash*  
University of Michigan, Ann Arbor, MI

### Inherited Modifiers of Risk

- 8:30 am *Introduction*  
*Daniel Nebert - Chair*  
University of Cincinnati, Cincinnati, OH
- 8:50 am Identification of Relevant Genes for Known or Suspected Human Carcinogens  
*Fred Kadlubar*  
National Center for Toxicological Research, Jefferson, AR
- 9:10 am Identification of SNPs and New Technologies for Genotyping  
*Stephen Chanock*  
National Cancer Institute, Bethesda, MD
- 9:45 am *Discussion*
- 10:00 am *Break - Coffee*



## Thursday, May 9 (Continued)

### Application of Genetic Biomarkers to Human Studies

10:30 am	<i>Introduction</i> <i>Paolo Boffetta - Chair</i> International Agency for Research on Cancer, Lyon, France
10:50 am	<u>Statistical and Interpretive Challenges to Analyzing Genetic and Exposure Data</u> <i>Sholom Wacholder</i> National Cancer Institute, Bethesda, MD
11:10 am	<u>Institute Review Boards, Ethics, and the Use of New Technologies in Molecular Epidemiology Studies</u> <i>David Christiani</i> Harvard School of Public Health, Boston, MA
11:30 am	<i>Discussion</i>
12:00 noon	<i>Lunch (on own)</i>

### Application of New Biotechnologies to the Understanding and Control of Known and Suspect Occupational Carcinogens

1:00 pm	<i>Introduction</i> <i>Paul Schulte - Chair</i> National Institute for Occupational Safety and Health, Cincinnati, OH
1:15 pm	<u>Validation and Linking Intermediate Biomarkers to Cancer</u> <i>Stefano Bonassi</i> National Institute for Research on Cancer, Genoa, Italy
1:35 pm	<u>Risk Assessment, Uncertainty and the Precautionary Principle</u> <i>Paolo Vineis</i> Turin University, Turin, Italy
1:55 pm	<i>Discussion</i>
2:15 pm	<i>Break - Coffee</i>



## Thursday, May 9 (Continued)

### Case Studies

---

2:45 pm

#### *Introduction*

*Paolo Boffetta - Chair*

International Agency for Research on Cancer, Lyon, France

3:00 pm

Diesel Exhaust: What Insights Will New Technologies Provide for  
Assessing the Risk of Exposure to a Complex Mixture?

---

*Roel Vermeulen*

National Cancer Institute, Bethesda, MD

3:15 pm

#### *Discussion*

3:30 pm

Perchloroethylene: How Can New Technologies Resolve an  
Ambiguous Occupational Exposure?

---

*Avima Ruder*

National Institute for Occupational Safety and Health, Cincinnati, OH

3:45 pm

#### *Discussion*

4:00 pm

Metal Working Fluids: Can New Technologies Help Assess Cancer Risk?

---

*Paige Tolbert*

Emory University, Atlanta, GA

4:15 pm

#### *Discussion*

4:45 pm

#### *Adjourn*

